CLAIMS

What is claimed is:

1. A method for measuring a first phase difference between first and second reflected polarized light signal components, the method comprising the steps of:

transmitting a first incident light signal toward a first object, wherein said first object is one of a magnetic disk and a glass substrate;

separating from a reflected light signal that has reflected off said first object a first mixed reflected polarized light signal component having a first phase and a second mixed reflected polarized light signal component having a second phase that is different from said first phase, wherein said first mixed reflected polarized light signal component comprises both P-polarized and S-polarized light relative to a plane of incidence of said reflected light signal, and wherein said second mixed reflected polarized light signal component comprises both P-polarized and S-polarized light relative to the plane of incidence of said reflected light signal;

detecting a first intensity of said first mixed reflected polarized light signal component;

detecting a second intensity of said second mixed reflected polarized light signal component; and

determining a difference in phase between said first and second mixed reflected polarized light signal components based upon said first and second intensities.

2. The method of claim 1 further comprising the step of:

determining a texture on said first object based upon said difference in phase.

3. The method of claim 1, further comprising the step of:

determining a thickness of a lubricant on said first object based upon said difference in phase.

4. The method of claim 1, further comprising the step of:

determining a thickness of a carbon layer of said first object based upon said difference in phase.

5. The method of claim 1, further comprising the step of:

determining a magnetic characteristic of said first object based upon said difference in phase.

6. The method of claim 1, further comprising the step of:

polarizing said first incident light signal to generate a first incident polarized light signal component and a second incident polarized light signal component of said first incident light signal, said first and second incident polarized light signal components being orthogonally polarized.

7. The method of claim 1, wherein said first and second mixed reflected polarized light signal components are orthogonally polarized.

8. The method of claim 1, further comprising the step of:

measuring the magneto-optic Kerr effect based upon said difference in phase.

9. The method of claim 8, further comprising the steps of:

determining a defect exists at a first location on the first object based upon said first and second intensities; and

marking said first location to identify said defect.

10. The method of claim 9, wherein said marking step further comprises the steps of:

moving a mechanical scribe to a position substantially adjacent to said first location;

positioning said mechanical scribe at substantially said first location; and

marking said first location with said mechanical scribe.

11. The method of claim 1, further comprising the steps of:

determining a defect exists at a first location on the first object based upon said first and second intensities; and

marking said first location to identify said defect.

12. The method of claim 11, wherein said marking step further comprises the steps of:

moving a mechanical scribe to a position substantially adjacent to said first location;

positioning said mechanical scribe at substantially said first location; and

marking said first location with said mechanical scribe.

13. The method of claim 1 wherein the step of determining a difference includes:

determining a difference between said first and second intensities to reduce the effect on at least one measured value of a texture on said first object.

14. A system for measuring a first phase difference between first and second mixed reflected polarized light signal components, comprising:

a light source for transmitting a first incident light signal toward a first object wherein said first object is one of a magnetic disk and a glass substrate;

a polarization splitter for separating from a first reflected light signal, that has reflected off of said first object, the first mixed reflected polarized light signal component having a first phase, and the second mixed reflected polarized light signal component having a second phase that is different from said first phase, wherein the first mixed reflected polarized light signal component comprises both P-polarized and S-polarized light relative to a plane of incidence of said reflected light signal, and wherein the second mixed reflected polarized light signal component comprises both P-polarized and S-polarized light relative to the plane of incidence of said reflected light signal;

a first detector for detecting a first intensity of the first mixed reflected polarized light signal component;

a second detector for detecting a second intensity of the second mixed reflected polarized light signal component; and

a phase determinator for determining a difference in phase between the first and second mixed reflected polarized light signal components based upon said first and second intensities.

15. The system of claim 14, wherein said phase determinator comprises:

a texture eliminator for determining a difference between said first and second intensities to reduce the effect on at least one measured value of a texture on said first object.

16. The system of claim 14, further comprising:

a thickness determinator for determining a thickness of a lubricant on said first object based upon said difference in phase.

17. The system of claim 14, further comprising:

a carbon thickness determinator for determining a thickness of a carbon layer of said first object based upon said difference in phase.

18. The system of claim 14, further comprising:

a magnetic identifier for determining a magnetic characteristic of said first object based upon said difference in phase.

19. The system of claim 14, further comprising:

a Kerr effect determinator for measuring the magneto-optic Kerr effect based upon said difference in phase.

20. The system of claim 19, further comprising:

a defect determinator for determining a defect exists at a first location on the first object based upon said first and second intensities; and

a mechanical scribe for marking said first location to identify said defect.

21. The system of claim 20, further comprising:

a scribe positioner for moving a mechanical scribe to a position substantially adjacent to said first location before marking said first location.

22. The system of claim 14, further comprising:

a defect determinator for determining a defect exists at a first location on the first object based upon said first and second intensities; and

a mechanical scribe for marking said first location to identify said defect.

23. The system of claim 22, further comprising:

a scribe positioner for moving a mechanical scribe to a position substantially adjacent to said first location before marking said first location.

24. The system of claim 14, further comprising:

a polarizer for polarizing said first incident light signal to generate a first incident polarized light signal component and a second incident polarized light signal component of said first incident light signal, said first and second incident polarized light signal components being orthogonally polarized.